

Application No. 10/064,283

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Appl. No. : 10/064,283
Applicant : Norman Arnold Turnquist et al.
Filed : 06/28/2002
Title : Brush Seal for a Steam Turbine and Method of Retrofitting
TC/A.U. : 3676
Examiner : PATEL, VISHAL A
Docket No. : 121251
Customer No. : 6147

REPLY BRIEF UNDER 37 CFR 1.193

Commissioner for Patents
P.O. Box 1450
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This Reply Brief is being submitted in response to the Examiner's Answer dated April 6, 2004. Appellant has carefully studied the Examiner's Answer wherein the Examiner continues to reject the remaining claims under 35 USC 103(a) over Basu US5884918 and under 35 USC 103(a) over Basu in view of Modell US5252224. Appellant stands behind the remarks and arguments articulated in the Appeal Brief and has prepared this Reply Brief solely to respond to Examiner Remarks in the "Response to Arguments" section of pages 9 and 10 of the Examiner's Answer.

With respect to paragraph 1, Appellant continues to traverse any suggestions that the particular materials claimed by Appellant are merely "a matter of choice in design" or that Modell's bristles are "art equivalent." The fact that Modell states in Col. 14, lines 41-43, that the cleaning brush may comprise "Inconel 625, Hastelloy C-276, stainless steel, or nylon" does not mean that each of these is art equivalent in general or is art equivalent with respect to brush seals in particular.

With respect to paragraph 2, sentence 2, Appellant traverses the suggestion that Modell teaches "that bristles of a brush seal can be made of Hastelloy". In fact, Appellant asserts that Modell's bristles are for the purpose of cleaning a tube by brushing, as also expressly discussed in Modell, Col. 12, line 8 - Col. 14, line 51, and are not described as being related to brush seals. Accordingly, Appellant continues to traverse the suggestion in sentence 3 that Modell's "cleaning" or "brushing" bristles are art equivalent to sealing bristles of brush seals.

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With respect to paragraph 3, sentence 2, Appellant traverses any suggestion that Modell's brush operates as a seal. As stated above, it is clear from Modell, Col. 12, line 8 – Col. 14, line 51, that Modell's brush is used for cleaning. Appellant does not find any instance of prevention of fluid across the bristles (sealing) of Modell's brush in Modell's description. In fact, in Modell Col 13, lines 10 – 13, Appellant finds an express mention of "brush velocity being lower than the reaction mixture velocity". Further, in Col 13, lines 64 – 68, Modell expressly states that in one of the embodiments "brush can be directed through the tubular reactor in direction opposite to that of the flow of the reaction mixture." It is clear to Appellant that such a brush, which can have a velocity lower than the flow (reaction mixture velocity) or be directed opposite to the direction of a flow, cannot be described as being operable as a seal.

With respect to paragraph 4, sentence 4, Appellant traverses that "Modell is in the same field of endeavor as appellants, brush seals, as evidenced by the operation of Modell's device." As discussed above, Appellant does not find any indication that Modell's endeavor lies in the field of brush seals.

With respect to paragraph 4, sentence 5, Appellant traverses the statement that "one of ordinary skill in the art would be reasonably led to Modell since minimizing friction between the brush seal and the piping is a problem being solved by Modell." Modell does not describe a brush seal and does not describe any effort to solve a friction "problem" between the cleaning bristles and tubular reactor. In fact, Modell merely uses friction between the brush bristles and the solids accumulated on the tubular reactor walls (exerting a drag force on the brush bristles) for removal of solid deposits on the reactor wall, Col. 13, lines 1 – 13. Appellant traverses the suggestion of sentence 6 that "one of ordinary skill in the art would reasonably look at how others had made brushes in general to solve this problem" and again questions how one endeavoring in the domain of brush seal applications would be reasonably motivated to look at cleaning applications.

In view of the foregoing, favorable reconsideration of the application is respectfully requested.

Respectfully submitted,



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